



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**

1200 Sixth Avenue, Suite 155
Seattle, WA 98101

REGIONAL
ADMINISTRATOR'S
DIVISION

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, D.C. 20426

Dear Ms. Bose:

The U.S. Environmental Protection Agency has reviewed the Federal Energy Regulatory Commission's January 2022 Notice of Intent to prepare an Environmental Impact Statement for the GTN XPress Project (EPA Project Number 22-0003-FERC) pursuant to Section 309 of the Clean Air Act and the National Environmental Policy Act. The CAA Section 309 role is unique to EPA. It requires EPA to review and comment publicly on any proposed federal action subject to NEPA's Environmental Impact Statement requirement.

The EIS will evaluate the potential environmental impacts associated with modification and operation of three existing compressor stations in Idaho, Washington, and Oregon. The modifications to the existing compressor stations would require the disturbance of about 46.9 acres of land. The project proponent would maintain about 1.2 acres of land for operation of the project facilities; the remaining acreage would be restored. The project would increase the capacity of GTN's existing natural gas transmission system by about 150,000 dekatherms per day between its Kingsgate Meter Station in Idaho and its Malin Meter Station in Oregon.

The enclosed detailed comments provide recommendations related to the estimation and disclosure of GHG emissions, air quality, noise, and environmental justice impacts. EPA suggests FERC consider EPA's May 26, 2021, letter responding to FERC's February 24, 2021, Notice of Inquiry invitation to submit comments on the Certification of New Interstate Natural Gas Facilities (Commission Docket No. PL 18-1-000) as an additional resource, as EPA provided a series of recommendations pertinent to the proposed project. In addition, EPA recommends that the Commission consider the outcomes of the recent Technical Conference on GHG Mitigation to better inform pending policy decisions on identification and consideration of practical mitigation of GHG emissions. EPA believes these pending policy decisions will be critical to ensuring that impacts and potential measures to avoid and minimize those impacts are fully considered, thus better informing the Commission's decisions around natural gas infrastructure project proposals.

Thank you for the opportunity to review the NOI for this project. If you have questions about this review, please contact Lauren Boldrick of my staff at (907) 271-5097 and boldrick.lauren@epa.gov,

or Rebecca Chu at (206) 553-1774 or at chu.rebecca@epa.gov.

Sincerely,

Andrew J. Baca
Director

Enclosure

**EPA Scoping Comments on the proposed
Turnagain Arm Tidal Electric Generation Project Preliminary Permit Application
Turnagain Arm, Cook Inlet, Alaska | June 2021**

General Comments

Alternatives

This proposed tidal energy project is unprecedented in Alaska. EPA recommends the project's NEPA document include a range of reasonable alternatives that meet the stated purpose and need for the project, are responsive to the issues identified during the scoping process and include options for avoiding significant environmental impacts. This will ensure the NEPA analysis provides agency decision makers and the public with information that defines the issues and identifies a clear basis for the choices made among the range of alternatives, as required by NEPA. In addition, the document should identify specific criteria used to: (1) develop the range of reasonable alternatives, (2) eliminate certain alternatives, and (3) select the agency's preferred alternative.

Given the proposed project will occur in an ecologically unique environment, EPA recommends the alternatives analysis include appropriate management and mitigation measures in addition to those included in the proposed project or alternatives. For example, EPA recommends considering:

- Measures to reduce the disturbance footprint;
- Habitat value, cultural significance, and risks in siting project components; and
- Measures to reduce impacts of construction, operations, and decommissioning activities, and minimize impacts to traditional and cultural uses and resources.

Scope of Effects

In accordance with the Council on Environmental Quality's NEPA implementing regulations, a NEPA document for proposed action needs to consider "changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that occur at the same time and place as the proposed action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives."¹ Therefore, EPA recommends the NEPA document for the proposed action:

- Delineate and explain the reasoning behind geographic boundary decisions, using natural ecological boundaries to the extent possible. For example, for wetland impacts, a natural boundary such as a watershed or sub-watershed could be identified for the spatial scope. An analysis at multiple geographic scales may also be appropriate;
- Include a determination and explanation for the analyses' temporal scope. For example, although construction, operations, and decommissioning activities could be projected to occur over 40 years, the duration of impacts may extend beyond the facility life; and
- Analyze and disclose impacts associated with all other infrastructure or marine activities in the decision area. These effects appear to be reasonably foreseeable and have a reasonably close causal relationship to the proposed tidal energy project.

Environmental Resources

Water Quality and Aquatic Resources

The proposed project activities may impact water quality and aquatic resources, resulting in changes to water quality parameters, particularly sedimentation and turbidity, of pollutant receiving waters in the

¹ 40 C.F.R. § 1508.1(g)

Tidal Fields. EPA recommends that the NEPA document developed for this action:

- Provide information on the most recent EPA-approved Water Quality Standards (WQS) for the State of Alaska and implications for water quality protection within waterbodies in the analysis area and vicinity.² Identifying the WQS will provide the public greater awareness of the water quality parameters and the project's potential impact to them;
- Discuss the project impacts analyses and conclusions based on the most recent WQS information;
- Provide information that demonstrates how water quality will be maintained or improved in waterways that are currently meeting the WQS in accordance with the State of Alaska antidegradation policies to protect existing and designated beneficial uses of surface waters;³
- Include the most current information regarding the status of the Clean Water Act (CWA) Section 401 certification and Section 404 permit application processes, as well as conditions to protect water quality and wetlands that transmission lines may transit through or at control/support facilities;⁴
- Discuss if the project will require National Pollutant Discharge Elimination System permit for discharges to surface waters of the U.S. The NEPA document would need to document the project's consistency with applicable permitting requirements and discuss specific mitigation measures that may be necessary or beneficial in reducing adverse impacts to water quality and aquatic resources due to the discharges; and
- Describe plans to coordinate with the Alaska Departments of Environmental Conservation, Natural Resources, and all affected tribes to ensure that state and tribal water and wetland resources are protected from impacts associated with activities under the proposed action.

Section 303(d) of the CWA requires the States to identify water bodies that do not meet WQS and to develop water quality restoration plans to meet established water quality criteria and associated beneficial uses. Therefore, the NEPA document for the project will need to include information on: impacted waters in the planning area, the nature of the impacts, and specific pollutants likely to affect those waters; waterbodies potentially affected by the project that are listed on the State and most current EPA-approved 303(d) list; existing restoration and enhancement efforts for those waters; how the proposed project will coordinate with on-going protection efforts; any mitigation measures implemented to avoid further degradation of impaired waters; and how the project will meet the CWA antidegradation provisions, which prohibit degrading water quality within water bodies that are currently meeting WQSs.

Protected Species and their Habitats

The proposed project may impact federally and state protected species and their habitats. EPA recommends that evaluation of the proposed project identify: the species in the project area and surrounding areas and their critical habitats; impacts the project will have on these resources (i.e., impacts to foraging abilities of protected species); and how the proposed project will meet all requirements under the Endangered Species Act, including consultation with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act and NOAA's National Marine Fisheries Service. It will be important to coordinate with the Alaska Department of Fish and Game to define construction, operations, and decommissioning practices that will be protective of biota and habitat during implementation of the project.

² <https://dec.alaska.gov/water/water-quality/standards/>

³ <https://dec.alaska.gov/water/water-quality/standards/antidegradation/>

⁴ <https://dec.alaska.gov/water/wastewater/wetlands>

Of particular concern in this area are the Cook Inlet beluga whales. The most recent population estimate from 2018 of Cook Inlet belugas is 279 individuals⁵, down from the 2016 estimate of 328 individuals and well over 1,000 individuals as recently as the 1970s. This population has declined over 75% from its historic population of 1,300 individuals and continues to decline at a rate of 2.3% annually. Of the species protected by NOAA Fisheries under the Endangered Species Act, the agency lists Cook Inlet belugas as one of nine closest to extinction.⁶ The whales are likely to be most impacted by pollution and human presence. Cook Inlet has a high amount of raw sewage contamination and industry pollution that perpetuates disease and illness within the beluga population. A 2019 study determined that Cook Inlet belugas have higher levels of carcinogenic polycyclic aromatic hydrocarbons than belugas in other wild populations or in aquariums. Carcinogenic PAHs are likely etiologically related to gastrointestinal epithelial cancers observed in dead adult belugas.⁷ To address this two-fold issue, EPA recommends that the Commission analyze the impacts to beluga whales through the lens of their foraging habitats and prey species, specifically:

- Existing and potential new infrastructure associated with other industrial activities in Cook Inlet, with regard to water quality impacts;
- Noise created by the power stations, meaning the acoustic impact areas (particularly overlapping areas between the stations) and the ability for the belugas to transit between the stations with minimal acoustic impact;
- Physical barriers of the proposed power stations that may impact the transit between foraging, nursing and/or birthing areas;
- Locations of channels used for foraging or transit between different areas used for foraging, nursing, or birthing; and
- Locations of high-use personal, commercial, and subsistence fishing areas.

More clarity will be necessary to understand the potential entrainment issues with the turbines, regarding the statement in the notice, “fish, whales, and other sea mammals can swim through without any difficulty.” We recommend that the NEPA document disclose potential habitat and species removal that may result from substrate removal.

Hazardous Materials

EPA recommends that the NEPA document for the proposed project addresses the potential impacts of hazardous materials/wastes management and storage from the construction and operation of the project and alternatives. Construction and operational activities may involve the transport and use of hazardous materials. The NEPA document will need to:

- Disclose the types and amounts of materials used at each step of construction, operations, and decommissioning;
- Describe measures taken to minimize the chances of an accidental release of pollutants in the environment, as well as emergency measures to be implemented should such an event occur;
- Indicate how potential adverse impacts from spills may be mitigated by effective containment and cleanup operations. It is important to identify how these operations may be undertaken during winter or spring conditions when ice floes are frequently transiting the proposed project area; and

⁵ NOAA. “NOAA Releases New Abundance Estimate for Endangered Cook Inlet Beluga Whales.” National Marine Fisheries Service, NOAA NMFS, 20 Jan. 2020, www.fisheries.noaa.gov/feature-story/noaa-releases-new-abundance-estimate-endangered-cook-inlet-beluga-whales.

⁶ NOAA. “Beluga Whales.” National Marine Fisheries Service, www.fisheries.noaa.gov/species/beluga-whale#spotlight. Accessed 3 June 2021.

⁷ Poirier, Miriam C et al. “Intestinal polycyclic aromatic hydrocarbon-DNA adducts in a population of beluga whales with high levels of gastrointestinal cancers.” *Environmental and molecular mutagenesis* vol. 60,1 (2019): 29-41. doi:10.1002/em.22251

- Identify potential health impacts to local communities or other project area users, and strategies to be used to communicate risks or actual emergencies.

Air Quality

Because the proposed action may result in impacts on air quality, EPA recommends the NEPA document for the project include:

- A detailed discussion of ambient air conditions (baseline or existing conditions), National Ambient Air Quality Standards, and pollutant non-attainment areas in the analysis area and vicinity, if applicable;
- An estimation of emissions of criteria pollutants for the analysis area and discuss the timeframe for release of these emissions from construction through the lifespan of the proposed project. For estimation of emissions, it would be helpful to specify all emission sources and quantify related emissions;
- A fugitive dust emissions analysis, including data on arsenic and any other constituent toxic metals within the fugitive dust. If the timeframe of emissions and/or background conditions warrant, a regulatory air pollutant dispersion model such as AERSCREEN or AERMOD may be used to determine concentrations of Particulate Matter (PM_{2.5}, PM₁₀), arsenic, as well as other toxic constituents;
- Specific information about pollutants from mobile sources, stationary sources, and ground disturbance;
- An Equipment Emissions Mitigation Plan that identifies actions to reduce diesel particulate, carbon monoxide, hydrocarbons, and NO_x associated with equipment used for the construction, operations, or decommissioning of the proposed project and its infrastructure;
- Potential effects from air pollutants, including air toxics, to workers, ground crews, nearby residents, and any sensitive receptor locations;
- Mitigation measures to minimize the proposed project impacts to air quality; and
- Address the Clean Air Act § 112(r), and, as applicable, the Emergency Planning and Community Right to Know Act, EPCRA § 303, 311, and 312, and related state and county regulatory programs.⁸ Information in the Public Notice indicates there may be hazardous materials routinely used for the project. Flammable fluids and gases, for example, are potential toxic gaseous pollutants that could be released during construction or operations, or as the result of an accident.⁹

Geology

EPA recognizes that the notice reflects that baseline characterization and mapping of shallow subsurface geology and bathymetry for the proposed project area will be completed. The purpose of geological, geotechnical, and geophysical surveys is to thoroughly assess the seafloor and subsurface environments for siting evaluation of the Tidal Power Stations and transmission lines, local geological hazards, and potential biological communities, shipwrecks, and archaeological sites. To address this topic, EPA recommends the NEPA document include:

- An acknowledgement of the regional geological context of the proposed project, supported by discussion of all available geological, geotechnical, and geophysical data for the proposed Tidal Fields areas;

⁸ http://www.epa.gov/oem/docs/chem/caa112_rmp_factsheet.pdf

⁹ <http://www2.epa.gov/epcra/what-epcra>

- An evaluation of any seafloor and subsurface geologic features that may adversely affect or be adversely affected by potential construction, operations, or decommissioning activities;
- Identification and discussion of the locations and size of archaeological or biological resources that may impact project site selection or require mitigation measures to lessen or avoid adverse impacts;
- Where relevant, a discussion of the presence of any active faulting, gaseous sediments, ice gouges, strudel scours, and unstable slopes and recurrence rates of mass movement of sediments; and
- Map(s) showing the surface and subsurface features, profiles, data, graphs, and tables to support all conclusions and interpretations based on the geophysical and geological surveys.

Dredging

If dredging will be a part of the proposed action, the NEPA document should include details of the dredging activities and locations. Dredging activities affect habitats and key ecological functions supporting recruitment and sustainability of estuarine and marine organisms. We advise the Commission to:

- Discuss any proposed duration and timing of any proposed dredging and anticipated maintenance dredging schedule (e.g., yearly, tri-annually) by alternative;
- Document how the proposed dredging and disposal operations are carefully planned and scheduled to avoid and minimize impacts to sensitive fish, shellfish, and habitat at critical periods for spawning and migration. We recommend that the Commission evaluate the potential impacts of any proposed dredging activities on species and their habitats, e.g., substrate removal that would result in habitat loss, local resuspension of sediment and turbidity increases, or the release of nutrients resulting in an increase in eutrophication and a lack of dissolved oxygen; and
- Discuss the principals of regional sediment management and recognize that under the Marine Protection, Research, and Sanctuaries Act, ocean disposal should be considered only a last resort when all other options have been exhausted. To support disposal decisions, an inventory of the physical and chemical characteristics of the dredged material should be conducted. We advise the Commission to consider beneficial reuse of the dredged material. Beneficial use of dredged material may require additional testing like grain size compatibility analysis, Atterberg shrinkage analysis, or plasticity analysis, particularly if the dredged material would be used as fill in nearshore/intertidal habitat areas where a certain elevation is necessary.

If dredging is proposed, we recommend that the analysis:

- Characterize the marine benthic environment and organisms, sediment composition and grain size, etc.
- Identify any biologically critical areas, such as migratory routes, benthic communities, and subsistence areas;
- Evaluate marine dredging, dewatering, transloading (from water to land), placement methods and options (summer and winter), and disposal sites (offshore, nearshore, upland, and open water), as well as beneficial uses of the dredged material;
- Include a sampling and analysis plan, as well as a marine dredging and disposal plan;
- Evaluate the following potential impacts of dredging activities on species and their habitats:
 - Substrate removal and any resulting habitat and species removal (entrainment);
 - Potential changes to estuarine bathymetry, fluvial and tidal energy, and substrate roughness, and any attendant impacts to salinity structure and estuarine circulation;

- Potential changes to sediment transport processes, including effects on adjacent shorelines;
- Alteration of sediment composition in and around the dredging site (including changes to the nature and diversity of benthic communities);
- Local resuspension of sediments and any turbidity increases;
- Spread of sediments (and any associated contaminants) into the area surrounding the dredging site;
- Release of sediment-associated nutrients, potential increases in eutrophication and resulting decreases in dissolved oxygen concentrations;
- Decreased primary production due to reduced transparency of the water column and/or smothering, particularly at in-water disposal sites; and
- Enhanced bioavailability and ecotoxicological risk of background contaminants and/or chemical or biochemical changes of contaminants.
- Consider implementation of effective mitigation measures to ensure that marine resources and habitats are adequately protected; and
- Incorporate a monitoring plan for marine protected resources and associated habitats to ensure effectiveness of mitigation measures.

Potential for Ocean Disposal of Dredged Material

Under Section 102 of the Marine Protection, Research, and Sanctuaries Act, EPA is responsible for designating and managing ocean dumping sites for all materials, including dredged material. EPA designates ocean disposal sites through rulemaking and sites are published at 40 C.F.R. § 228.15. EPA bases the designation of an ocean disposal site on environmental studies of a proposed site, studies of regions adjacent to the site, and historical knowledge of the impact of disposal on areas similar to the site in physical, chemical, and biological characteristics. All studies for the evaluation and potential selection of dredged material disposal sites should be conducted in accordance with the criteria for the selection of disposal sites for ocean dumping published in 40 C.F.R. §§ 228.5 and 228.6. The minimum requirements for baseline assessment surveys are found in 40 C.F.R. § 228.13.

The evaluation process includes conducting oceanographic studies to establish the environmental conditions at all alternative locations being considered as potential sites, as well as the area or region encompassing the alternative sites. Results from oceanographic studies and other sources are used to model likely dispersion and deposition of material disposed at the alternative sites and evaluate potential impacts. If there are no practicable alternatives to ocean dumping that will have a less adverse impact on the environment, this information is used to select the best ocean site proposed for designation.

If ocean disposal is proposed, we encourage the Commission to engage early and actively with the EPA to ensure that site selection activities are consistent with the MPRSA and the ocean disposal criteria. The NEPA document must be adequate for the EPA to ensure that use of the site selected for designation will not likely cause unreasonable degradation to the surrounding marine environment. In addition, only dredged material that is authorized for disposal under the MPRSA and 40 C.F.R. Part 227 may be disposed in an EPA-designated ocean dredged material disposal site.

Environmental Justice and Tribal Consultation

Subsistence Resources

To characterize the impacts of the proposed project, EPA recommends that the NEPA document include the following information:

- Discussion of the project's potential disproportionate adverse impacts to local populations. See Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.¹⁰ One initial screening tool to identify communities with Environmental Justice concerns is EPA's Environmental Justice Screening and Mapping Tool or EJSCREEN.¹¹ You may also consult EPA website for additional resources on this topic;¹²
- Reference studies or analyses to support the discussion and conclusions on subsistence uses within or proximate to the project area and its potential effects;
- Measures to be taken to minimize the project's effects on any subsistence resources and uses in the project area or because of the proposed action;
- Discussion on potential changes to the region's economy because of the proposed tidal energy fields; and.
- Analysis of economic changes and corresponding impact to local communities.

The Cook Inlet is an area rich in subsistence resources used for fishing, hunting, and gathering. Like many of the villages that are established on Cook Inlet, Tyonek reported that per capita, it harvests over 200 pounds of subsistence resources per year, including fish, game (terrestrial and marine mammals), marine invertebrates, and plants.¹³ It is important to recognize the potential impacts to subsistence communities through potential exposure pathways such as game meat processing, surface water contact during fishing, and sediment disturbance from food gathering. EPA encourages decisions – and, where appropriate, measures and practices – that ensure the significance and integrity of subsistence resources will be maintained.

Coordination with Tribal Governments

EPA recommends the NEPA document describe the process and outcome of government-to-government consultation between the Commission and each of the tribal governments that may be affected by the project, issues that were raised, and how those issues were addressed.

Public Participation

EPA recommends open public meetings, where feasible, to encourage open dialogue and discussion with the Commission and others, especially in areas where communities with environmental justice concerns are impacted. To assist environmental justice communities' participation in Commission proceedings, EPA recommends the National Environmental Justice Advisory Council's Model Guidelines for Public Participation.¹⁴

When the Commission identifies that communities with environmental justice concerns may be disproportionately affected by the proposal, the Commission should consider developing a new alternative to alleviate adverse effects, modifying the project design, engaging any new relevant communities with environmental justice concerns, or incorporating mitigation measures. For example, a

¹⁰<https://www.archives.gov/files/federal-register/executive-orders/pdf/12898.pdf>

¹¹ <https://www.epa.gov/ejscreen>

¹² <https://www.epa.gov/environmentaljustice/resources-creating-healthy-sustainable-and-equitable-communities>

¹³ Stanek, Ronald T. et al. 2007. Harvest and uses of wild resources in Tyonek and Beluga, Alaska 2005-2006. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 321. Juneau, AK.

¹⁴ <https://www.epa.gov/sites/production/files/2015-02/documents/recommendations-model-guide-pp-2013.pdf>

new alternative may consider additional mitigation efforts and restrictions, as well as potentially relocating the proposal from the area as much as possible. It is important to note that the burden already existing in many communities with environmental justice concerns might mean that no amount of mitigation or distribution of impacts can justify a certain location or design for the project. In these instances, the project evaluation should, as appropriate, fundamentally consider a wholly novel approach to satisfy the project's purpose and need.

Climate Resilience and Greenhouse Gas Emissions Resilience

In characterizing the affected environment and environmental consequences of the proposed action, EPA recommends that the NEPA document for the proposed project:

- Include existing and reasonably foreseeable environmental trends related to a changing climate;
- Discuss reasonably foreseeable effects that a currently changing climate will have on the proposed project and the project area, including its infrastructure (i.e. long-term operations and maintenance). This could help inform the development of measures to improve the climate resilience of the proposed project. If projected climate-related changes could notably stress the affected environment or exacerbate the environmental impacts of the project, these impacts should also be considered as part of the NEPA analysis; and
- Estimate the direct and indirect greenhouse gas emissions that would result from proposed construction, operations, and decommissioning activities.¹⁵ Estimated emissions can serve as a useful proxy for assessing relative effects, comparing alternatives and supporting the need for practicable mitigation to reduce greenhouse gas emissions.

EPA notes the notice does not address effects of climate change. Climate change will alter flow rates and seasonality, temperature, wind fields, and coastal water current patterns which will further modify coastal habitats, particularly in Alaska.¹⁶ It is important to contextualize these impacts, particularly the interconnectedness of these impacts to migratory species (avian and marine mammals) and anadromous fish populations that use Cook Inlet.

Permits and Authorizations

As the project will likely require a variety of authorizations, EPA recommends that the NEPA document include a list of all permits/authorizations that the proposed project already has and will need including modification(s) to any existing permit or authorization, what activity and/or facility is regulated by the permit or authorization, entities that will issue each permit and authorization, when each will expire, and conditions to assure protection of human health and the environment. Such information, presented in a consolidated fashion, will assist agency decision-makers and the public in evaluating the proposed project's impacts and mitigation required to address those impacts.

Monitoring and Adaptive Management

The proposed project has the potential to impact a variety of resources for an extended period when all the applicant's claims in the decision area are taken into consideration. Therefore, EPA recommends that the project design include an environmental inspection and mitigation monitoring program to ensure compliance with all mitigation measures and assess their effectiveness. EPA also recommends that the document describe the monitoring program and its use as an effective feedback mechanism so that any needed adjustment can be made during construction, operation, maintenance, and decommissioning of facilities.

¹⁵ <https://ceq.doe.gov/guidance/ghg-accounting-tools.html>

¹⁶ Jickells, T.D., J.E. Andrews, & Parkes, D. J. (2016). Direct and indirect effects of estuarine reclamation on nutrient and metal fluxes in the Global Coastal Zone. *Aquatic Geochemistry*, 22, 337-348.

Financial Assurance

NEPA provides for the disclosure of all information concerning the environmental consequences of a proposed action to agency decision makers and the public before decisions are made and actions are taken. Key components in determining the environmental impacts of a large infrastructure project is the effectiveness of the decommissioning and mitigation activities. In turn, whether any decommissioning activities that may be necessary will be adequately funded is key to determining whether those activities will be effective. EPA therefore recommends that the project's ability to self-fund, and/or any third-party financial assurance mechanisms, be disclosed. For this, the NEPA document will need to disclose the decommissioning and mitigation cost estimate for the project; evaluate whether the estimate is sufficient to reclaim and close the site in a manner that achieves decommissioning goals and post-mining land use objectives; and describe how the agencies will ensure that the appropriate amount of financial assurance is available to ensure that decommissioning, and mitigation occurs.

Without adequate financial assurance, this proposed project may pose significant risks to human health and the environment as well as financial risks to the public. EPA therefore suggests the Commission require financial assurance mechanisms in the license and/or other authorizations that the Commission may issue for this project. The Commission should also consider having separate permit components requiring financial assurance to ensure proper and effective implementation. For example, operation and/or mitigation requirements for water quality certification or Endangered Species Act permit conditions might need coverage under financial assurance. In addition, financial assurance may be necessary for license surrender and infrastructure removal.

Considerations on Amount of Financial Assurance

When deciding the appropriate amount of financial assurance, EPA suggests the Commission consider:

- Increased risks caused in the latter years of operations by aging infrastructure;
- Anticipated severe weather events caused by changing climate conditions, with attention to physical oceanographic impacts; and
- Diversity of project-specific risks based on facility age and condition, estimated energy output, geography, proximity of housing, natural resources, development within the surrounding floodplain, and other considerations.

Considerations on Timing of Financial Assurance

Given the importance of protecting communities from power failures, EPA suggests:

Financial assurance be required at the earliest practical time, which can be at the issuance of original permits for new projects. Given the 30 to 50-year term for the Commission's licenses, EPA suggests exploring options to augment existing licenses with financial assurance rather than waiting for the term of the license to end. Requiring periodic updates to financial assurance calculations and instruments will ensure the required financial assurance remains current as conditions and the economic value of at-risk natural resources and human development change over time.